

426/66

R'

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



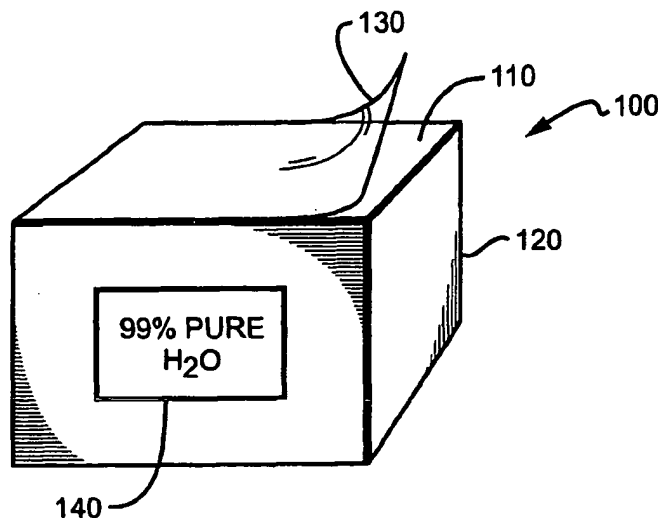
(43) International Publication Date
19 December 2002 (19.12.2002)

PCT

(10) International Publication Number
WO 02/100740 A1

- (51) International Patent Classification⁷: **B65D 85/72**, F25C 1/22
- (21) International Application Number: PCT/US01/18624
- (22) International Filing Date: 8 June 2001 (08.06.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant (for all designated States except US): **HARMAN, Robert** [US/US]; 1844 Aberdeen Drive, Glenview, IL 60025 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **KRONHAUS, Adolfo** [AR/AR]; Av. Galceran No. 213, Pcia de Bs. As Carlos Casares (AR).
- (74) Agent: **ZOETEWEE, David, J.**; Rutan & Tucker, LLP, P.O. Box 1950, Costa Mesa, CA 92628-1950 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK (utility model), SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
— with amended claims
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **INDIVIDUAL PREPACKAGED ICE CUBES**



(57) Abstract: The present invention provides methods and articles of manufacture for individually packaged water containers (120, 210, 410) that can be frozen to provide individual ice cubes. Preferred embodiments include not more than 15 ml of drinking fluid (110) pre-dispensed in a repeatedly freezable, fluidly sealed container. The drinking fluid is preferably pure or almost pure water, although a flavoring or coloring may also be added. Salinity is preferably low, less than 5%. The container can be substantially cubical, although innumerable other shapes are also contemplated, including flattened packet-type shapes, spheres, cylinders, and so forth. The container may advantageously include one or more labels (140), which may identify the contents, brand, and so forth. Advertising may appear on the container itself, or inside a lumen of the container along with the drinking fluid.

WO 02/100740 A1

INDIVIDUAL PREPACKAGED ICE CUBES

Field of the Invention

The field of the invention is pre-packaged frozen foodstuffs.

Background

5 Consumers often find that ice cubes acquire undesirable flavors from materials in a refrigerator or freezer. This problem has been addressed by providing substantially enclosed ice cube areas, or more preferably by providing substantially enclosed ice cube bags. An example is set forth in US patent no. 4181285 to Vangedal-Nielsen (Jan. 1980). A commercial embodiment is sold under the brand name Scubs™ (see www.scubs.com).

10 The problem, however, is not resolved for areas of the world where the tap water is impure. Common impurities, for example, include chemical poisons such as pesticides and heavy metals, as well as parasites such as *Cryptosporidium*, and bacteria such as *E. coli*.

That problem can conceptually be resolved by filling the ice cube trays or bags with purified or bottled water, but those solutions are still unsatisfactory for travelers who need to
15 rely upon the actions of employees in hotels, restaurants, and other public facilities. In such cases the ice cube consumers have little or no control over what water is used in making the ice cubes.

Thus, there is still a need to provide individual, pre-packaged ice cubes, that can be frozen intact at or near the site of use, and then unpackaged by the consumer.

20 Summary of the Invention

The present invention provides methods and articles of manufacture for individually packaged water containers that can be frozen to provide individual ice cubes.

Preferred embodiments include not more than 15 ml of drinking fluid pre-dispensed in a repeatedly freezable, fluidly sealed container. The drinking fluid is preferably pure or
25 almost pure water, although a flavoring or coloring may also be added. Salinity is preferably low, less than 5%.

The container can be substantially cubical, although innumerable other shapes are also contemplated, including flattened packet-type shapes, spheres, cylinders, and so forth. The container may advantageously include one or more labels, which may identify the contents, brand, and so forth. Advertising may appear on the container itself, or inside a lumen of the
5 container along with the drinking fluid.

Various objects, features, aspects, and advantages of the present invention will become more apparent from the following detailed description of preferred embodiments of the invention, along with the accompanying drawings in which like numerals represent like components.

10 **Brief Description of The Drawings**

Figure 1 is a perspective view of an individually packaged ice cube container.

Figure 2 is a perspective view of an elongated ice cube that fits into a small opening in a beverage container.

Figure 3 is a schematic view of a star shaped ice cube.

15 Figure 4 is a schematic view of a plurality of water containers coupled together.

Figure 5 is a schematic view of a packet of water having rip apart container.

Detailed Description

In Figure 1, a container 100 generally comprises a case 120, and a drinking fluid 110. The case 120 advantageously also has a peel back top 130 and a label 140.

20 The case 120 is preferably made from a thin plastic that is suitable for repeated freezing and thawing. Many suitable plastics are known, including high and low density polyethylene, and polystyrene. Other materials are, however, also contemplated, including paper and metal containing materials. By contrast, the common "creamers" containers that typically contain cream, "half and half", or non-dairy creamer, are not designed for repeated
25 freezing and thawing, and tend to leak after only 1 or 2 three freezing cycles. Preferred

containers can withstand at least 3 freezing and thawing cycles without noticeable leaking, more preferably at least 5 such cycles, and still more preferably at least 10 such cycles.

The term "drinking fluid" should be interpreted herein as broadly as possible while remaining with the overall inventive concept. A preferred drinking fluid 110 is water, which is preferably at least 95% H₂O, more preferably at least 98% H₂O, still more preferably at least 99% H₂O, and still more preferably at least 99.9% H₂O. The drinking fluid, however, may be less than 95% H₂O, and may in fact not include any water at all. It is contemplated, for example, that the drinking fluid may contain at least 20% ethanol. It is preferred that the salt content is kept below 20 %, more preferably below 10%, even more preferably below 5%, and even more preferably below 1%. All percentages herein are given in weight percent.

On the other hand, the term "drinking fluid" is contemplated to exclude fluids not intended for human consumption. Thus, eye drops are not considered to be drinking fluid because they are either labeled "not for internal use", or because of some undesirable characteristic such as inclusion of polymers, high salt content, preservatives, and so forth.

It is contemplated that the drinking fluid may advantageously include one or more of a flavoring agent and a coloring agent. Thus, grape, orange, or other flavored drinking fluids are contemplated, as well as non-natural flavors such as Coca-Cola™ or other soft drink. Substantially all imaginable colors are contemplated.

Advantages of the flavors, colors, and other non-water components should be readily apparent given the disclosure herein. For example, in one contemplated embodiment an airline stewardess may hand out a small bottle of gin, an individual ice cube container according to the present invention, and a cup to a passenger. The container may comprise substantially frozen tonic water that the passenger adds to the alcohol in the cup. If the user does not use container, he can return it to the stewardess, who may provide it to another passenger. If the container has substantially thawed, the stewardess may refreeze it. The drinking fluid, especially when frozen, may serve as a decoration to a drink and may contain food coloring.

Although the amount of fluid is very small compared with most common requirements, individual ice cube containers according to the present invention can be used

for numerous purposes. For example, contemplated uses include providing small amounts of water to animals, applying to the face, eyes, hair, or other surface of the body.

The amount of drinking fluid is preferably an amount that would be suitable for an ice cube. This is contemplated be no more than 15 ml, possibly no more than 10 ml, and
5 possibly no more than 5 ml. To some extent, the proper volume of fluid is related to the shape of the frozen product, as discussed more fully below.

The container 100 can be advantageously referred to as an item of manufacture because it is contemplated that the container will be pre-dispensed with the drinking fluid during the manufacturing process, as opposed to being filled at or near the site of use. This is
10 one of the many ways in which Scubs™ type products are distinguished.

Opening of the container 100 can be accomplished in many different ways. Most preferred at present is a peel back top 130. Also contemplated, however, is a pop through version in which the top or other surface of the case 120 is sufficiently weak that the ice cube can puncture the surface when the user applies sufficient pressure to an opposing surface.
15 Also contemplated is a peel cord version, where a plastic or other string extends part way around the case such that pulling on the string in a given manner opens the case along the string. A rip-apart version is also contemplated, in which some or all of the case 120 is sufficiently weak that a user can simply rip open the container with his/her fingers.

Regardless of the manner used to open the container 100, it is thought to be desirable
20 that the container 100 is either not re-sealable, or at least not readily re-sealable. This feature is deemed to facilitate confidence in the consumer that the contents of the container are what they purport to be.

It seems advertisers are always seeking novel means of advertising. In this instance the container 100 may advantageously include one or more labels, such as label 140. The
25 label can be glued, printed, or affixed in any other manner, and may include any sort of contents. Preferred labels include a trademark, brand name, or other indicia of origin, as well as a description of the contents. A label or other advertising may be included on any surface, including an inside surface of the container 100, as well as being free-floating within the lumen of the case 120. It is contemplated, for example, that a manufacturer may include

some sort of edible embodiment of a trademark within the fluid, such that the trademark remains within the ice cube when the ice cube is placed into a glass of water.

Figure 2 depicts a drink bottle 210 and a packet of substantially frozen drinking fluid 220. The elongated shape of the frozen fluid 220 makes it easy to insert into the drink bottle 210. In the embodiment depicted by Figure 2, a drink may be cooled, and or flavored by the drinking fluid. A preferred elongated shape fits easily into the opening of typical bottles and cans. The length of the frozen drinking fluid 220 is preferably at least 5 times greater than the square root of the greatest cross section, but other proportions are contemplated. Although not shown, the casing for frozen drinking fluid 220 would likely have substantially the same overall size and shape as the frozen drinking fluid 220. All other features can be the same as those described above with respect to Figure 1.

Figure 3 is a substantially frozen drinking fluid 310 in the shape of a star. Other shapes are contemplated including holiday shapes such as a Christmas tree, a bell, a pumpkin, and a rabbit. Here again, the drinking fluid would preferably approximate the size and shape of the container.

In Figure 4, a plurality of coupled fluid containers 400 are depicted. Each container 410 is coupled to another fluid container by a peel back top 430 having perforations 420 that make it easy to separate coupled containers. In a contemplated embodiment, a waiter at a restaurant may ask a patron how many ice cubes he/she would like with a drink. The waiter may then provide the appropriate number of ice cubes coupled together. If the drink arrives cold, the patron may decide to use only a portion of the ice cubes provided. The remaining containers may then be taken home, provided to another patron, or returned to the waiter.

Figure 5 is a prospective view of a container of drinking fluid 510, but here having a packet shaped container 520. This particular container has a dual tab opening, that the user operates by pulling tab 530A away from tab 530B, and then extruding the ice cube or other frozen product through the resulting opening.

It should now be clear that contemplated methods include: providing an individual ice cube sealed in a container; breaking a seal on the container; and cooling the beverage with ice cube. The "seal" in such instances should be understood as a structure sufficient during

normal handling to keep the enclosed fluid inside the container until use, in at least a commercially feasible percentage of occurrences. For example, if during a shipment of 10,000 containers, a few container break during relatively rough shipping and handling, the container and contemplated to be adequately sealed.

5 Thus, specific embodiments and applications of a packet of fluid have been disclosed. It should be apparent, however, to those skilled in the art that many more modifications besides those already described are possible without departing from the inventive concepts herein. The inventive subject matter, therefore, is not to be restricted except in the spirit of the appended claims. Moreover, in interpreting both the specification and the claims, all
10 terms should be interpreted in the broadest possible manner consistent with the context. In particular, the terms "comprises" and "comprising" should be interpreted as referring to elements, components, or steps in a non-exclusive manner, indicating that the referenced elements, components, or steps may be present, or utilized, or combined with other elements, components, or steps that are not expressly referenced.

CLAIMS

What is claimed is:

1. An item of manufacture, comprising:
not more than 15 ml of drinking fluid pre-dispensed in a repeatedly freezable, fluidly sealed container.
2. The item of manufacture of claim 1 wherein the container contains not more than 10 ml. of the drinking fluid.
3. The item of manufacture of claim 1 wherein the container contains not more than 5 ml. of the drinking fluid.
4. The item of manufacture of claim 1, further comprising a label.
5. The item of manufacture of claim 1, further comprising an advertisement.
6. The item of manufacture of claim 5, wherein the advertisement is printed on an exterior surface of the container.
7. The item of manufacture of claim 5, wherein the advertisement is included within a lumen of the container.
8. The item of manufacture of claim 1 wherein the drinking fluid comprises at least 99 % H₂O.
9. The item of manufacture of claim 1 wherein the drinking fluid comprises at least 95% H₂O.
10. The item of manufacture of claim 1, further comprising a flavoring agent.
11. The item of manufacture of claim 1, further comprising a coloring agent.
12. The item of manufacture of claim 1 wherein the drinking fluid comprises no more than 5 % salt.

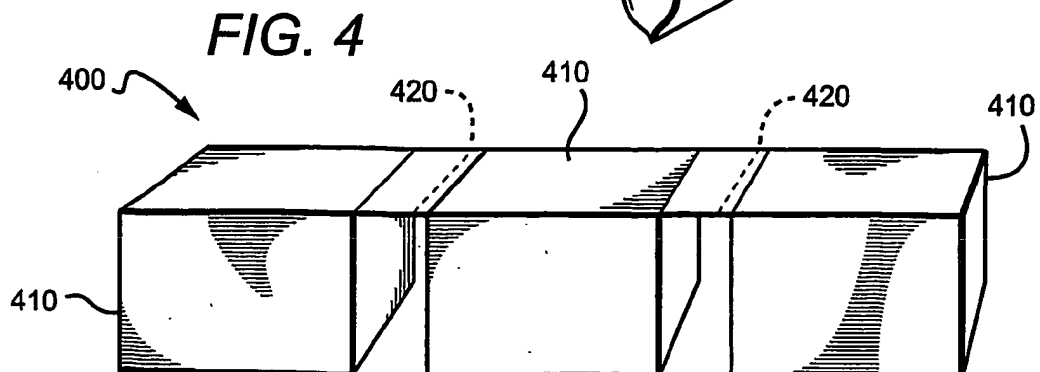
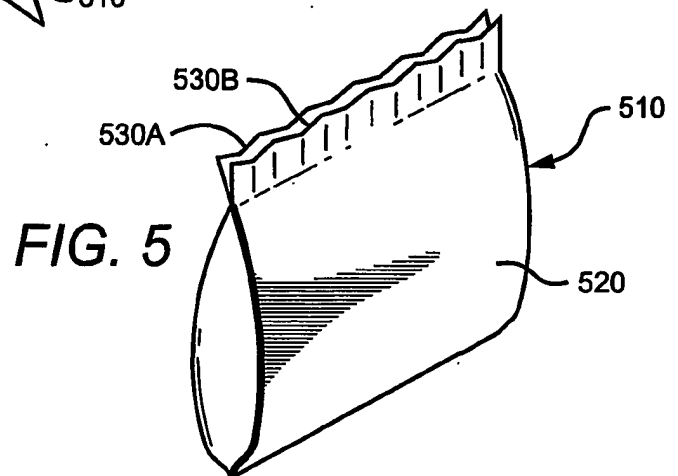
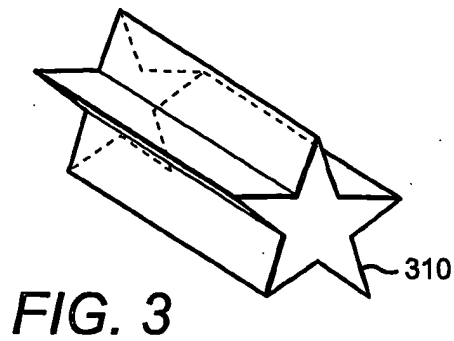
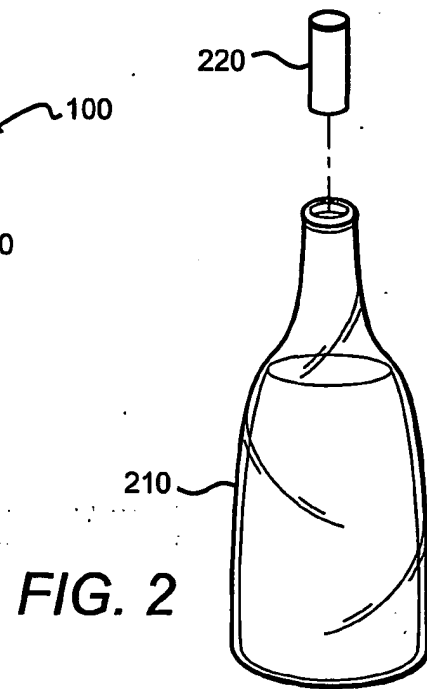
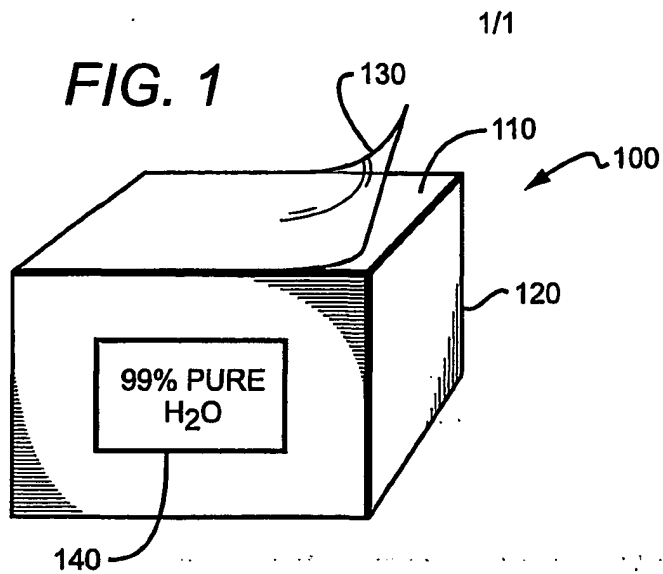
13. The item of manufacture of claim 1 wherein the drinking fluid comprises no more than 1 % salt.
14. The item of manufacture of claim 1 wherein the container is substantially cubical.
15. The item of manufacture of claim 1 wherein the container is substantially non-cubical.
16. The item of manufacture of claim 1, further comprising a removable flap.
17. A method of cooling a beverage comprising:
 - providing an individual ice cube sealed in a container;
 - breaking a seal on the container; and
 - cooling the beverage with ice cube.
18. The item of manufacture of claim 1 wherein the container contains not more than 15 ml. of the drinking fluid.
19. The item of manufacture of claim 1, further comprising an advertisement included within a lumen of the container.
20. The item of manufacture of claim 1 wherein the drinking fluid comprises at least 99 % H₂O.

AMENDED CLAIMS

[received by the International Bureau on 25 June 2002 (25.06.02);
original claims 1 and 17 amended; remaining claims unchanged (2 pages)]

1. An item of manufacture, comprising:
not more than 15 ml of drinking fluid pre-dispensed in a repeatedly freezable, fluidly sealed container, the container including a label containing a trademark, brand name, or other indicia of origin, as well as a description of the contents.
2. The item of manufacture of claim 1 wherein the container contains not more than 10 ml. of the drinking fluid.
3. The item of manufacture of claim 1 wherein the container contains not more than 5 ml. of the drinking fluid.
4. The item of manufacture of claim 1, further comprising a label.
5. The item of manufacture of claim 1, further comprising an additional advertisement.
6. The item of manufacture of claim 5, wherein the advertisement is printed on an exterior surface of the container.
7. The item of manufacture of claim 5, wherein the advertisement is included within a lumen of the container.
8. The item of manufacture of claim 1 wherein the drinking fluid comprises at least 99 % H₂O.
9. The item of manufacture of claim 1 wherein the drinking fluid comprises at least 95% H₂O.
10. The item of manufacture of claim 1, further comprising a flavoring agent.
11. The item of manufacture of claim 1, further comprising a coloring agent.
12. The item of manufacture of claim 1 wherein the drinking fluid comprises no more than 5 % salt.

13. The item of manufacture of claim 1 wherein the drinking fluid comprises no more than 1 % salt.
14. The item of manufacture of claim 1 wherein the container is substantially cubical.
15. The item of manufacture of claim 1 wherein the container is substantially non-cubical.
16. The item of manufacture of claim 1, further comprising a removable flap.
17. A method of cooling a beverage comprising:
providing a tray of ice cubes containing a plurality of sealed units;
manually separating off a single one of the sealed units from the container along a perforation, the single one of the sealed units including a label containing a trademark, brand name, or other indicia of origin, as well as a description of the contents;
breaking a seal on the single sealed unit to release a single ice cube; and
cooling the beverage with the ice cube.
18. The item of manufacture of claim 1 wherein the container contains not more than 15 ml. of the drinking fluid.
19. The item of manufacture of claim 1, further comprising an advertisement included within a lumen of the container.
20. The item of manufacture of claim 1 wherein the drinking fluid comprises at least 99 % H₂O.



INTERNATIONAL SEARCH REPORT

 International application No.
 PCT/US01/18624

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B65D 85/72; F25C 1/22

US CL : 426/66,106,115,393,87

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 426/66,106,115,393,87

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 4,899,976 A (CEDERROTH ET AL) 13 FEBRUARY 1990 (13.02.90), see entire document.	17 ----- 1-16,18-20
X ----- Y	US 5,393,032 A (CEDERROTH) 28 FEBRUARY 1995 (28.02.95), see entire document.	17 ----- 1-16,18-20
X ----- Y	FR 2,611,668 A (THILLAYE) 09 SEPTEMBER 1988 (09.09.88), see figure 1 and accompanying abstract.	17 ----- 1-16,18-20
X ----- Y	GB 2,230,331 A (DALEY) 17 OCTOBER 1990 (17.10.90), see entire document.	17 ----- 1-16,18-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"G" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

09 NOVEMBER 2001

Date of mailing of the international search report

03 JAN 2002

 Name and mailing address of the ISA/US
 Commissioner of Patents and Trademarks
 Box PCT
 Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

STEVEN WEINSTEIN

Telephone No. (703) 308-0650

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/18624

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 2,955,044 A (TUPPER) 04 OCTOBER 1960 (04.10.60), see entire document.	17 ----- 1-16,18-20
X ----- Y	FR 2,169,491 A (HENRY) 27 JANUARY 1972 (27.01.72), see figures 1-4 and accompanying abstract.	17 ----- 1-16,18-20
Y	US 2,334,941 A (LINDEN) 23 NOVEMBER 1943 (23.11.43), see entire document.	7,19
Y	US 3,734,276 A (BANK) 22 MAY 1973 (22.05.73), see entire document.	7,19